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May 26, 1998

Via Hand Delivery

Ms. Magalie Roman-Salas
Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Re: Ex Parte Report, PR Docket 92-235

Dear Ms. Salas:

On Friday, May 22, 1998, the attached letter was delivered to Ari Fitzgerald, Legal Advisor to Chairman Kennard, and to Rosalind Allen, Deputy Bureau Chief of the Wireless Telecommunications Bureau, to raise concerns about lifting the current freeze on the licensing of high-powered systems on the former 12.5 kHz offset channels in the 450-470 MHz band that are employed by medical telemetry systems.

Respectfully submitted,

Diane C. Gaylor
Diane C. Gaylor

cc: Ari Fitzgerald, Esq.
Ms. Rosalind Allen

Attachment

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May 22, 1998

Ari Fitzgerald, Esq.
Legal Advisor to Chairman William E. Kennard
Federal Communications Commission
1919 M Street, N.W., Room 814
Washington, D.C. 20554

Re: PR Docket 92-235

Dear Mr. Fitzgerald:

We are writing to follow-up on a meeting you and Rosalind Allen attended on May 15, 1998, with representatives of SpaceLabs Medical, Inc. ("SpaceLabs"), the Hewlett-Packard Company ("HP"), and the Mayo Foundation, relating to the current freeze on the licensing of high power users on the "offset" channels in the 450-470 MHz band in the above-cited proceeding.^{1/} A number of topics were covered at that brief meeting, and we believe clarification on a few points and further explanation of some of the topics would be useful.

The purpose of the May 15 meeting was to demonstrate the importance of maintaining the freeze on the licensing of high power users on the offset channels in the 450-470 MHz band. As discussed in detail below, the principle messages we hoped to impart were:

- The freeze was intended to protect low power users, such as biomedical telemetry operations, until they could be accommodated by, e.g., establishment

^{1/} See Ex Parte Report, PR Docket 92-235, filed by Henry Goldberg and Jonathan Wiener, attorneys for HP, on May 15, 1998.

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of, and transition to, a low-power "home." No plan for low-power users has yet been achieved, however, despite the efforts of the biomedical telemetry community. The plan submitted by the Land Mobile Communications Council ("LMCC") by its terms does not take into account the needs of these low-power operations.

- The biomedical telemetry community has been involved in the refarming rulemaking since the beginning, and is not a "late-comer" to the proceeding.^{2/}
- The impact of prematurely lifting the freeze at this junction would be enormous on both manufacturers and hospitals.^{3/}

I. Background.

A. Introduction to Biomedical Telemetry Operations.

Since the late 1960s, SpaceLabs has been designing and manufacturing wireless electrocardiogram ("ECG") monitoring systems,^{4/} initially using technology developed by the company while working with NASA on then-new biomedical telemetry systems for the manned spaceflight program. At present, there are more than 100,000 portable ECG transmitters in operation in hospitals and similar

^{2/} As you will recall, HP distributed at the May 15 meeting a partial chronology of the involvement of HP and SpaceLabs on this issue before the FCC and with the frequency coordinators for the band. We have supplemented HP's chronology with additional SpaceLabs involvement, as Attachment 1 to this letter.

^{3/} You will recall that Steven Deick of the Mayo Foundation came to the May 15 meeting prepared to give a short presentation on the harm that would be caused to the operations of the Mayo Clinic if the freeze was prematurely lifted. His materials were distributed at the meeting.

^{4/} An ECG monitoring system records and visually displays in real time the electrical currents that stimulate the contraction of the heart muscle. Irregular heart beats or other cardiac problems are identified by observing distortions in the electrical current represented by the ECG. Such systems can also be used to provide other patient parameters, such as blood pressure, temperature, and the like.

healthcare facilities throughout the U.S., approximately 60% of which operate on the 450-470 MHz offset channels.

In a wireless ECG monitoring system, a small, portable unit (weighing approximately 7 oz.) is carried by the patient in a holster-style arrangement. The portable unit collects data gathered by electrodes attached to the patient's skin and transmits the data to an array of receiving antennas located in the ceiling of the corridors and other common areas of the hospital that are accessible to the patient. The signal is then carried via wire to a central point for processing and viewing, generally at a nurse's station. To ensure accuracy, and to aid in identifying potential cardiac problems before they become acute, it is essential that the telemetry system provides a continuous, real-time data stream that is absolutely error-free.

Wireless ECG monitors provide both the hospital and the patient with vastly increased flexibility. Except for circumstances in which the patient is nonambulatory (e.g., in intensive care), it is logistically easier, and far more cost-effective, to employ portable units. More importantly, the portable units permit ambulatory patients a great deal of freedom of movement, an aspect of the recovery process that has become increasingly important in the judgment of the medical profession.

Biomedical telemetry has fairly rigid operational requirements. Communication must be (1) instantaneous, (2) continuous, and (3) free from any interference that might cause a data error. Because of considerations relating to battery life, transmissions must be kept to relatively low powers.^{5/} Moreover, for reasons of cost, and to ensure proper operation, portable ECG monitors are not frequency-agile; each is tuned to a specific channel.

The main problem that historically has confronted biomedical telemetry operations is susceptibility to interference, which stems primarily from: (1) its very low operating power; (2) the limited number of channels available in any given locale, particularly in major urban areas where high-power mobile use generally is extensive; and (3) its secondary status vis-à-vis those high-powered systems.

^{5/} Low power also increases frequency reuse capabilities. In general (depending on variables such as building construction and terrain shielding), frequencies presently may be successfully reused at less than 5,000 foot separations, which is a significant consideration in large urban medical centers.

B. Regulatory History.

Because of a variety of relatively inflexible power and weight considerations, discussed supra, biomedical telemetry systems must operate between 100 and 1,000 MHz. SpaceLabs' early generations of ECG monitors (as well as those of many other manufacturers) operated primarily in the VHF band, under the provisions of Part 15 of the Rules.^{6/} Eventually, the Commission established an exclusive reserve for biomedical telemetry operations under Part 15, on the vacant television channels in the 174-216 MHz band (VHF channels 7-13).^{7/} Biomedical telemetry is also permitted under Part 15 on the vacant channels in the 512-566 MHz band (UHF channels 21-29).^{8/} However, until recently, the severe restrictions on power levels inherent in Part 15 operations (*i.e.*, a maximum field strength of 1500 $\mu\text{V/m}$ measured at 3 m for the VHF channels^{9/} and 200 $\mu\text{V/m}$ at 3 m for the UHF channels^{10/}), completely precluded use of these allocation by medical telemetry.^{11/}

^{6/} See generally SpaceLabs, Inc., 26 F.C.C.2d 40 (1970); Laser Systems and Electronics, Inc., 26 F.C.C.2d 19 (1970).

^{7/} See 47 C.F.R. § 15.241; Biomedical Telemetry Radio Systems, 33 F.C.C.2d 880 (1972).

^{8/} See 47 C.F.R. § 15.209(g)(2).

^{9/} See 47 C.F.R. § 15.241.

^{10/} See 47 C.F.R. § 15.209(g)(2).

^{11/} More recently, at the urging of the biomedical community, and in response to the serious shortage of usable spectrum for biomedical telemetry, the Commission has amended Part 15 to expand the availability of frequencies and to increase the permitted power for unlicensed biomedical telemetry devices operated on television channels. Specifically, biomedical devices operated within healthcare facilities are now permitted in the frequency bands of 174-216 MHz (TV channels 7-13) and 470-668 MHz (TV channels 14-46) at power levels of 200 mV/m, as measured at 3 meters. See Amendment of Part 15 of the Commission's Rules to Permit Operation of Biomedical Telemetry Devices on VHF TV channels 7-13 and on UHF TV channels 14-46, Report and Order, FCC 97-379, October 20, 1997. As discussed further infra, these changes, while valuable, were never meant as a substitute for the 450-470

(continued...)

As a result, some companies (including SpaceLabs) migrated their product lines to operate in the 450-470 MHz band in the Business Radio Service.^{12/} Specifically, operation of medical telemetry, at higher power than permitted under the Part 15 rules, has been permitted under Part 90 in the "offset" channels located 12.5 kHz from the center frequencies of the main high-power 25 kHz channels licensed in the 450-470 MHz band.^{13/} This allocation has historically provided approximately 280 offset channels usable for biomedical telemetry, depending on locale.^{14/}

However, actions taken in the Private Land Mobile Radio Service ("PLMRS") "spectrum refarming" proceeding threaten use of these channels for biomedical telemetry purposes. In 1991, the FCC commenced this proceeding, to make more efficient use of the PLMRS spectrum, including the 450-470 MHz band. Eventually, after a pleading cycle in which SpaceLabs and other biomedical telemetry manufacturers participated,^{15/} a Report and Order ("the R&O") was adopted by the Commission.^{16/} The new rules, as part of a new narrowband channel plan, make the 12.5 kHz offset channels assignable for high-power operations, rendering them useless for low-power operations. Therefore, SpaceLabs (as well as HP) filed a Petition for Reconsideration and/or Clarification of the new Part 90 rules, requesting that the

^{11/} (...continued)

MHz band, and do not obviate the need for a low-power "home" in that band.

^{12/} See 47 C.F.R. §§ 90.75, 90.217, 90.267.

^{13/} See 47 C.F.R. § 90.267.

^{14/} See 47 C.F.R. §§ 90.75, 90.267.

^{15/} See, e.g., Comments of SpaceLabs Medical, Inc. (filed May 28, 1993), Reply Comments of SpaceLabs Medical, Inc. (filed July 30, 1993), and Comments of SpaceLabs Medical, Inc. (filed November 20, 1995).

^{16/} See Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, Report and Order and Further Notice of Proposed Rulemaking, FCC 95-255, June 23, 1995 (the "R&O"); see also Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, Memorandum Opinion and Order, FCC 96-492, December 30, 1996 (deferring resolution of low-power issues to a future Order, see ¶ 99).

Commission take steps to ensure the availability of an adequate amount of spectrum for use by biomedical telemetry devices on a primary basis.^{17/}

Recognizing the continued need for low-power channels, the Commission stated in the R&O that, as part of the implementation of the Commission's plan for radio service consolidation, frequency coordinators could designate specific channels for low power use.^{18/} The Commission provided the PLMRS community three months to negotiate and submit a consensus plan for consolidation.^{19/}

The problem is, there are no coordinators representing true low-power users. As noted in the attached chronology, shortly after the issuance of the R&O, SpaceLabs and HP attended several meetings with land mobile frequency coordinators to try to develop solutions to low-power issues, but the coordinators had no interest in addressing this issue. At these meetings, SpaceLabs' and HP's proposed solutions were rebuffed as "premature," pending resolution of the band consolidation problem.^{20/}

In response to the concerns of biomedical telemetry and other low-power users, whose operations became threatened by the imminent licensing of high-power users on the offset channels, the FCC imposed a freeze on the filing of high-power applications for the 12.5 kHz offset channels in, inter alia the 450-470 MHz band.^{21/} The Commission stated that the freeze would not be lifted "until issues are

^{17/} SpaceLabs' Petition for Reconsideration and/or Clarification (filed August 18, 1995).

^{18/} R&O, ¶ ¶ 64-65.

^{19/} R&O, ¶ 52.

^{20/} As the Commission is well aware, the radio service consolidation itself took far longer than three months set by the Commission for the task.

^{21/} See Public Notice, DA 95-1771, August 11, 1995; See also Public Notice, DA 95-1839, August 22, 1995 (expanding the freeze to include channels outside the 450-470 MHz band); Public Notice, DA 97-2006, September 23, 1997 (lifting the freeze as to channels outside the 450-470 MHz band only).

resolved relative to the consolidation of radio services and/or the designation of dedicated channels in the 450-470 MHz band for low-power use."^{22/}

By 1997, consolidation plans had been reached for high-power users of the PLMRS bands, but no consensus plan to accommodate low-power use had been achieved. The Commission issued a Second Report and Order^{23/} (the "2nd R&O") implementing the consolidation plans, but urging the parties "to address the issue of low power channels as soon as possible," recognizing that "establishing a workable low power frequency plan is not a trivial matter."^{24/} The coordinators were given six months to determine which channels should be designated for low-power use, but the Commission made it clear that the freeze would not be lifted until such a plan is established.^{25/} No low-power channels have been established; it is therefore premature to lift the freeze.

II. The Biomedical Telemetry Community Has Actively Been Involved in the Spectrum Refarming Proceeding.

There appears to be a misconception that biomedical telemetry community is a "late-comer" to the spectrum refarming proceeding, as is therefore unfairly impeding implementation of a plan developed by high-power users. As demonstrated above and in the chronology presented in Attachment 1, SpaceLabs and HP have been actively involved in the refarming proceeding since the beginning.

Throughout this proceeding, SpaceLabs has attempted to work in good faith with the Commission and the coordinators of the 450-470 MHz band to develop a plan that would permit the co-existence of high-power and low-power users in the band. Recognizing that the only way to efficiently accommodate both types of users in the band is to create a low-power "home," which would require migration of some biomedical telemetry operations to new frequencies within the band, SpaceLabs joined

^{22/} Public Notice, DA 95-1771, August 11, 1995.

^{23/} See Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, Second Report and Order, FCC 97-61, rel. March 12, 1997 ("2nd R&O").

^{24/} 2nd R&O, ¶ 63.

^{25/} 2nd R&O, ¶¶ 65, 67.

HP in proposing a plan for such migration.^{26/} The problem appears to be that high-power users are not similarly prepared to adjust their operations to new frequencies and/or incur the costs for such changes. SpaceLabs stands ready to work with the high-power industry to devise a plan that will advance the interests of both the biomedical community and the more traditional user groups.

It has been suggested that the biomedical telemetry community is itself to blame if it is not yet prepared to swiftly migrate to a new frequency band. As we explained in our meeting, in the absence of a migration plan, including most importantly the destination of that migration, it is impossible for manufacturers to develop and put into production equipment lines designed for the new frequencies. Adoption of a plan is a prerequisite for its implementation.

^{26/} The HP/SpaceLabs plan, submitted to the FCC in an ex parte presentation on September 29, 1995, involves a two-tier approach. A small contiguous region (2.5 MHz) of dedicated very-low-power channels (less than 120 mW, with limitations on non-biomedical telemetry use within hospitals) would be created to accommodate most medical telemetry operations. Additional channels to accommodate the largest hospitals would be operated on a secondary basis outside the dedicated very-low-power home. The transition would involve a one-for-one swap of existing low-power offset channels for new channels in the very-low-power home, as quickly as space within the very-low-power region is made available. The entire region need not be cleared of all higher-powered licensees before the swapping could begin; a new channel could be swapped in provided that no high-power licensee was closer than 25 kHz. Medical telemetry operators would submit the least frequently used channels outside the region to the frequency coordinator for swapping.

III. The LMCC Plan Does Not Accommodate Low-Power Biomedical Telemetry Operations.

The LMCC plan does not accommodate low-power biomedical telemetry operations. As discussed in detail in a letter from SpaceLabs and HP to Daniel Phythyon, dated April 15, 1998, LMCC's plan does not (and, by LMCC's own admission,^{27/} does not even purport to) provide adequate usable spectrum even for existing biomedical telemetry operations in the band. LMCC's plan would reduce the available pool of low channels from approximately 280, depending on locale, to 80^{28/} and consolidate use from other business and non-business radio services on these few channels. Only a very few of these channels would remain usable for biomedical telemetry.

At our meeting, Ms. Allen expressed surprise that the plan did not meet the needs of low power users, citing the participation of the American Hospital Association ("AHA") in the formulation of the plan. Our understanding, however, is that AHA was not represented in the process.

IV. A Low-Power "Home" Should be Created in the 450-470 MHz Band.

A. It is Manifestly in the Public Interest that Biomedical Telemetry Operations be Permitted in a Portion of the 450-470 MHz Band.

It was suggested in the May 15 meeting that low-power use does not belong in the subject band, and that any low-power home should be created outside this band. Nothing could be further from the truth. Migration to a sub-band of frequencies within the band will advance a number of important objectives, due to the fact that antenna and other infrastructure already deployed in hospitals could be readily re-used. Hospitals could be provided next-generation equipment faster and at lower cost. As discussed further below, this will help shorten the required transition period substantially, meaning that high-power operations could be licensed on the

^{27/} LMCC's letter to Daniel Phythyon, Chief Wireless Telecommunications Bureau, dated June 4, 1997 (the "Consensus Plan"), at 7.

^{28/} This comprises 40 channel pairs that, under LMCC's plan, would be limited to 2 watts and specified for "non-voice coordinated" (10 channel pairs), "central alarm systems," (5 channel pairs) and "non-coordinated itinerant" (25 channel pairs) uses.

vacated offset channels much earlier than if low-power operations are moved to a distant band.

Furthermore, it was never the intent of the refarming proceeding to eliminate low-power operations in these bands. On the contrary, as discussed above, the R&O recognized the need for designated low-power channels in the band, and the 2nd R&O stated that the freeze would not be lifted until a plan for such designated was established.^{29/} Finally, as discussed below, no other bands have been identified that could meet the needs of biomedical telemetry operations.

1. The 902-928 MHz Band is Not an Appropriate Home for Biomedical Telemetry Operations.

At the May 15 meeting, it was suggested that the 902-928 MHz band might be a good home for biomedical telemetry operations. This is not the case, for a variety of reasons.

First, this band, characterized as a "kitchen sink" band in Kobb's Spectrum Guide,^{30/} currently accommodates, not always successfully, a wide variety of applications from wireless stereo speakers, bacon dryers and donut fryers, to high-power military radars (on a primary basis).^{31/} Several applications using this band, such as microwave ovens, are likely to be used in hospitals, threatening interference to biomedical telemetry operations if placed in that band. Transmissions from other applications, such as Location and Monitoring Service operations (used for, e.g., vehicle location), are not confined to buildings.

Second, this band, higher in frequency than the 450-470 MHz band, has higher path losses, and equipment must therefore operate at a higher power in this band. Furthermore, a variety of low-power operations share in this band through use of spread spectrum modulation, which also requires an increase in power. Increased power is problematic for biomedical telemetry equipment. As SpaceLabs has

^{29/} R&O, ¶ ¶ 64-65; 2nd R&O, ¶ ¶ 65,67.

^{30/} Bennett Z. Kobb, Spectrum Guide: Radio Frequency Allocations in the United States, 30 MHz-300 MHz, 1995, at 91-97.

^{31/} Id.

explained repeatedly in its comments to the FCC,^{32/} biomedical telemetry transmitters must be worn by patients who are in a very weakened state, and must therefore be very lightweight and small. Increased power increases battery size, and hence weight.

2. The UHF and VHF Channels Authorized for Biomedical Telemetry Operations Are Not Sufficient to Support the Demand for Telemetry Services, Either Now or in the Future.

In addition, although the Commission has authorized biomedical telemetry operations meeting specified technical criteria on certain VHF and UHF TV channels,^{33/} this allocation was never intended as, and does not represent, a comprehensive solution to the need for low-power channels. For example, for VHF channels 7-13, in some markets (e.g., Yonkers, New York), there will be no unassigned/unused channels available for medical telemetry after the rollout of DTV. In other markets (e.g., San Jose, Baltimore, Boston), the availability of VHF channels will accommodate fewer than 240 telemetry channels, while the projected growth in demand for such channels is closer to 600-700 channels. UHF channels 14-20 (470-512 MHz), are dedicated in the top 11 cities to land mobile communications licensees, and may not be available for medical telemetry.

These frequencies are limited, secondary spectrum, that were never intended to provide anything more than a safety valve for expanded medical telemetry functions that cannot be accommodated in existing bands. Nothing could make the limitation of such spectrum more clearly evident than recent reports that existing medical telemetry systems operating on VHF TV channels have suffered interference and are being forced to try to relocate by the introduction of DTV.^{34/}

^{32/} See supra note 15.

^{33/} See supra note 11.

^{34/} See, e.g., "FDA Public Health Advisory: Interference Between Digital TV Transmission and Medical Telemetry Systems" (March 20, 1998); "Joint Statement of the FCC and the FDA Regarding Avoidance of Interference Between Digital Television and Medical Telemetry Devices" (March 25, 1998).

B. Licensing of High-Power Users on the Offset Channels Threatens Biomedical Telemetry Operations.

Licensing of high-power operations at or near the current offset channels threatens biomedical telemetry operations. As noted above, the 450-470 MHz band currently accommodates approximately 280 channels, depending on locale. Even now, however, because of interference from high power operations, many of these 280 channels may be unavailable in a particular locale, depending on the nature of co-channel and adjacent channel operations.^{35/} In many major medical centers, upwards of 250 telemetry channels may be in operation at any given time, thereby essentially exhausting the available supply in the 450-470 MHz band. If one or more channels are receiving interference from an outside source, there is often not be an alternative channel available to which to move.

The situation will be far worse if high-power operations are licensed on or near the offset channels. Even if such licensing is not extensive in a given locale, needed low-power channels will be eliminated. More likely, a flood of high-power applications will be received for most locales, driving medical telemetry from the band without an alternative to which to migrate.

At the May 15 meeting, it was suggested that the impact may be less than expected because high-power licensees may make light use of their channels. However, as noted above, biomedical telemetry operations demand instantaneous, continuous, error-free communications. Channels that are only lightly used by high-power users cannot be used at all for biomedical telemetry, because each time a high-power transmission is made, a patient monitoring station will receive interference and an alarm will sound. In such cases, it is not immediately apparent whether the cause is interference or a patient in jeopardy. The problems that would be caused by such "sharing" with high-power uses is self-evident.

^{35/} Indeed, seemingly viable offset channels used by biomedical telemetry in the 450-470 MHz band sometimes turn out to suffer from periods (however brief) of totally debilitating interference, due to the random meanderings of a high-powered mobile unit operating on an adjacent or co-channel.

V. A Reasonable Period for Transition of Biomedical Telemetry Operations to a Home Within or Without the 450-470 MHz Band is Required to Protect Life-Saving Hospital Services.

Even if a low power home is established, a reasonable period for transition of biomedical telemetry operations must be permitted. If biomedical telemetry is moved to a low-power home within the 450-470 MHz band, as SpaceLabs advocates, the transition period will be short. As noted above, infrastructure already installed within hospitals can be reused, and current product lines can be adapted for or simply tuned to the new frequencies. In this case, a transition period of approximately three years is needed to fully switch-over the substantial installed base.

If, on the other hand, low-power channels are eliminated in the 450-470 MHz band, and biomedical telemetry operations are forced to migrate elsewhere, the transition period will be much longer, in order to accommodate product development cycles, amortization periods, FDA authorization proceedings, and the demands on the service staff resources of equipment providers. Based on these factors, SpaceLabs believes that a reasonable transition period would be no shorter than nine years. This corresponds to a two-year development cycle and a seven-year amortization of newly-installed equipment.

VI. Premature Lifting of the Freeze Will Dramatically Adversely Impact Biomedical Telemetry Manufacturers and Hospitals, Significantly Impairing Patient Care.

The impact on manufacturers and hospitals, of all sizes and geographic locations, if the freeze is lifted without adoption of a low-power home and a reasonable transition period, will be dramatic.

As demonstrated in the presentation distributed at the May 15 meeting by the Mayo Foundation, premature lifting of the freeze would impose high costs to medical institutions and compromise patient care. At the Mayo-Rochester facility, 250 channels (transmit/receive pairs) are operated in the 459-470 MHz band in twelve separate patient care units, and an interior antenna system provides coverage for 550,000 square feet, using approximately 600 low power antennas. Mayo's total investment in this system is approximately \$2 million. Without a reasonable transition period to procure and install new equipment, and to amortize the replacement costs, lifting of the freeze would be a substantial burden, even to an

Ari Fitzgerald, Esq.

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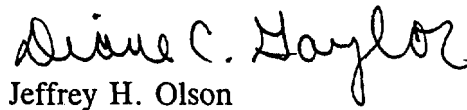
institution with the financial and technical resources of the Mayo Foundation. Other less fortunate hospitals will suffer even more, to the detriment of patient care.

Manufacturers will suffer by a lifting of the freeze as well. Despite patient need, hospitals will be reluctant to assume the expense of upgrading or expanding existing systems or adding new systems upon the lifting of the freeze because of the potential for the obsolescence of current product lines.

Conclusion

For the above reasons, it is imperative that a solution to the low-power issue be reached, and a reasonable transition period be implemented, before the freeze on applications for the offset channels in the 450-470 MHz band is lifted. As discussed above, SpaceLabs and HP have proposed the creation of a 2.5 MHz low-power home in the band. Transition to this band could be incremental, as high-power users transition out of the designated region. As low-power users migrate into the region, high-power operation could be readily licensed on the vacated channels outside the region, without any threat to vital biomedical telemetry operations.

Sincerely,



Jeffrey H. Olson
Diane C. Gaylor

cc: Ms. Rosalind Allen
Eugene V. DeFelice, Esq.

Attachment

CHRONOLOGY

- Pre-November 1992: HP and other medical products companies participate in FCC-sponsored panel discussions and file comments in response to initial refarming Notice of Inquiry, emphasizing need to protect medical telemetry in the 450-470 MHz band.
- November 1992: Refarming NPRM.
- March 1993: HP participates in FCC panel discussions on refarming, emphasizing sensitivity of medical telemetry equipment to higher-powered mobile radios on same frequencies.
- May 1993: HP and SpaceLabs comment on refarming NPRM, pointing out that LMCC's plan to authorize high-powered operations on telemetry frequencies "would create an intolerable level of interference for ECG and other medical telemetry devices."
- July 1993: HP and SpaceLabs reply comments again point out that LMCC proposals would not protect medical telemetry.
- June 1995: Refarming First Report and Order and Further NPRM. HP requests freeze on high-powered operations on telemetry frequencies, pointing out that, while Order left low-power issues to be resolved later, without a freeze, medical telemetry "could disappear overnight."
SpaceLabs files in support of freeze.
- August 1995: FCC institutes freeze, as requested, pending establishment of protection for telemetry in the band.
- August 1995: HP and SpaceLabs petition for reconsideration, emphasizing need to create a "safe harbor" for medical telemetry.
- August 1995: SpaceLabs attends PCIA Open Industry Forum Regarding "Refarming."
- September 1995: HP and SpaceLabs submit a proposal for establishing a "safe harbor."

October 1995: HP and SpaceLabs attend several meetings convened by the LMCC Radio Service Task Force to try to develop solution to low-power issues, but coordinators have no interest in discussing the low-power issue.

November 1995: HP and SpaceLabs comment on refarming Further NPRM.

November 1995: HP and SpaceLabs report to FCC the failure of meetings with coordinators, expresses doubt that industry groups can resolve issues on their own, and asks the Commission to take "an active role to resolve the difficult issue at hand."

January 1996: HP reply comments on Further NPRM.

February 1996: Space Labs participates as an exhibitor in the FCC's New Technology Exhibit for the En Banc Hearing on Spectrum Policy.

June 1996: HP and SpaceLabs meet with Wireless Bureau to express concerns regarding lack of progress in reaching a solution to low-power refarming issues.

January 28, 1997: FCC seeks comment on ITA "blueprint." The "blueprint" sets out a plan for low-power use, which was developed by a LMCC working group from which medical telemetry representatives were excluded.

February 7, 1997: HP comments on ITA's blueprint, stating that it would make medical telemetry use of the band impossible.

February 20, 1997: FCC adopts ITA blueprint as Second Report and Order, but maintains freeze and gives industry six months to develop a consensus and says it will revisit issue if no consensus.

February-April 1997: HP meets with LMCC representatives -- Motorola and PCIA -- and is presented with "LMCC plan," which they concede will not accommodate medical telemetry, since accommodation would be inconsistent with the interests of LMCC's constituent organizations.

March 1997: HP petitions for reconsideration of Second Report and Order, asking the Commission to take a more direct role in developing a solution to the low-power issue, instead of leaving resolution to land mobile frequency coordinators.

March 1997: HP meets with Wireless Bureau to discuss lack of progress in industry talks.

May 1997: HP writes to Bureau to inform of impasse in negotiations and, again, asks the Commission to become directly involved.

May 1997: HP meets with Bureau to discuss stalemate.

June 1997: LMCC submits so-called "Consensus Plan" for low-power use of the band -- essentially the same plan that LMCC's representatives presented to HP two months earlier.

June 1997: HP and SpaceLabs write again to Bureau, demonstrating that, "[i]n simple terms, LMCC's plan would force many hospitals nationwide to shut down systems..." Again, the Commission is urged to take a direct role.

July 1997: HP reply comments regarding Second Report and Order, taking issue, among other things with the contentions of ITA that medical telemetry should never have been permitted to use these frequencies in the first place.

January 1998: HP and SpaceLabs write to Bureau responding to an LMCC request to implement its "Consensus Plan," pointing out that coordinators think that they don't need to negotiate with medical telemetry and that, unless the FCC steps in, they won't.

April 1998: HP and SpaceLabs write to Bureau responding to an ITA letter urging implementation of "Consensus Plan."